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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/913,625      | 08/16/2001  | Masuo Okada          | SHIG C 11119        | 2946             |

7590 03/11/2004

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| ART UNIT | PAPER NUMBER |
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1742

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/913,625 | <b>Applicant(s)</b><br>OKADA ET AL. |  |
|                              | <b>Examiner</b><br>Sikyln Ip         | <b>Art Unit</b><br>1742             |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02/18/04;01/12/04.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22,23,26-32,34 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22,23,26-32,34 and 37-39 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 34 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 34 fails to further limit the subject matter of a previous claim 24 which has been canceled. Moreover, the limitation of claim 34 is recited in claim 22.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.3218 may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 22, 23, 26-32, 34, and 37-39 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/149,815 (U.S. Publication No. 2002/0189723). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claimed material and processing steps are overlap said copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### **Claim Rejections - 35 USC § 103**

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 1742

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c ) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 22, 23, 26-28, 31, 32, 34, and 37-39 are further rejected under 35 U.S.C. ' 103 as being unpatentable over JP 10-121180 (item 57 - abstract, item 0013 in Detailed Description).

The cited reference(s) disclose(s) the features including the claimed material and BCC structure (abstract) and process steps such as melting, heating/homogenizing, quenching in oil or iced water (see Detailed Description [0013]. The difference between the reference(s) and the claims are as follows: Cited reference does not disclose repeatedly melting and solidifying. However, a two step combination and two obvious process steps is unpatentable when each lends properties to the final product known to be produced when the step is practiced alone, in the absence of evidence of co-action between the steps which produce an obvious result. In re Fortress (CCPA 1966) 369 F2d 1009, 152 USPQ 13. Furthermore, it is known in the art of cited references to remelt the cast material in order to enhance homogenization.

The contents of elements as set forth in claims 26-28 read on zero which suggests recited elements could be excluded from claims.

When prior art compounds and steps essentially "bracketing" the claimed compounds in structural similarity and steps are all known, one of ordinary skill in the art would clearly be motivated to make those claimed compounds in searching for new products in the expectation that compounds similar in structure will have similar properties. In re Gyurik, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979); See In re May, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) and In re Hoch, 57 CCPA 1292, 1296, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (1970). Therefore, it

Art Unit: 1742

would have been obvious to one of ordinary skill in the art to select any portion of range/steps, including the claimed range/steps, from the broader range disclosed in a prior art reference because the prior art reference finds that the prior art composition and steps in the entire disclosed range/steps has a suitable utility. Also see MPEP § 2131.03 and § 2123.

Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-121180 as applied to claims above, and further in view of JP 11-106859 (item 57-abstract).

The claimed subject matter as is disclosed and rejected above by the JP 10-121180 except for V element. JP 10-121180 discloses Ti-Cr-V alloy is known. V is expensive and V could be replaced by Mo and/or W. However, JP 11-106859 in their abstracts disclose the conventional Ti-Cr-V alloys in the same field of endeavor or the analogous metallurgical art. It has been held that combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. In re Castner, 186 USPQ 213 (217). The use of conventional materials to perform their known functions in a conventional process is obvious. In re Raner, 134 USPQ 343 (CCPA 1962).

With respect to claim 30, that the claimed 8 atomic % is not considered different from 9 atomic % as taught by JP 11-106859 because it is well settled that a prima facie case of obviousness would exist where the claimed ranges and prior art do not overlap but are close enough that one ordinary skilled in the art would have expected them to have the same properties, In re Titanium Metals Corporation of America v. Banner, 227 USPQ 773 (Fed. Cir. 1985), In re Woodruff, 16 USPQ 2d 1934, In re Hoch, 428 F.2d 1341, 166 USPQ 406 (CCPA 1970), and In re Payne 606 F.2d 303, 203 USPQ 245

(CCPA 1979). To overcome the prima facie case, an applicant must show that there are substantial, actual differences between the properties of the claimed compound and the prior art compound. Hoch, 428 F.2d 1343-44, 166 USPQ 406 at 409.

### ***Response to Arguments***

Applicant's arguments filed January 12, 2004 and declaration filed January 12 and February 18, 2004 have been fully considered but they are not persuasive.

Applicants' argue that the examples of JP '180 do not disclose iced water quenching. But, iced water quenching has been taught (see [0018]). Moreover, it is well settled that the examples of the cited reference are given by way of illustration and not by way of limitation. In re Boe, 148 USPQ 507 (CCPA 1966) and In re Snow, 176 USPQ 328. Assuming arguendo that example of prior art uses only water for quenching, but what different would that make if said water quenchant has the same cooling rate as iced-water?

Applicants argue Graph 1 in instant declaration has shown iced-water quenching is critical. But the examiner disagree because the BCC intensity from oil quenching is many times stronger than intensity due to iced-water quenching. Furthermore, as compare BCC intensity to C15 and C 36 laves intensities that C15 and C 36 laves intensities are appeared as noise level.

Applicants' argument as set forth with respect to Graph 2 in instant declaration is noted. But, Graph 2 is found inconsistent with applicants' argument. At the plateaus, hydrogen gas pressure at 0.4, iced-water quenched sample has less protium concentration than oil quenched sample. At the extreme high hydrogen gas pressures,

Art Unit: 1742

all sample converge to the same protium concentration. Thus, Graph 2 is found inconsistent with applicants' argument that iced-water is critical. Moreover, the instant specification discloses cooling rate of more than 100k/sec is preferred. But, it has been held that features which are merely "preferred" are not critical. In re Goffe, 191 USPQ 429 (CCPA 1976).

Applicants argue that the claimed Mo and W contents are critical. But, Figures 9 and 10 have shown no Mo and W would have the same effect. Moreover, assuming arguendo that the Figures 9 and 10 have shown Mo and W, but the ranges are not consistent with the instant claims. The showing of unexpected results must be occurred over the entire claimed range. In re Clemens, 622 F.2d 1029, 206 USPQ 289, 296 (CCPA 1980). The scope of the showing must be commensurate with the scope of the claims. In re Tiffin, 448 F.2d 791, 792 (Fed. Cir. 1971), In re Coleman, 205 USPQ 1172, In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983), and In re Greenfield, 197 USPQ 227.

Applicants argue that the claimed "repeatedly melt and solidify" is critical. But, applicants have not substantiated their position with factual evidence. A two step combination and two obvious process steps is unpatentable when each lends properties to the final product known to be produced when the step is practiced alone, in the absence of evidence of co-action between the steps which produce an obvious result. In re Fortress (CCPA 1966) 369 F2d 1009, 152 USPQ 13.

Applicants argue that Graphs 3-5 in declaration have shown the claimed heating time is critical. But, applicants' argument is found inconsistent with the Graph 3 because Graph 3 has show heating time less than 20 minutes has better property which



Art Unit: 1742

is not supported by the instant specification (see paragraph bridging pages 18 and 19 of the specification as originally filed). The property or result relied upon must be disclosed in the specification or flow naturally from the teaching of the specification. In *re Slocombe*, 184 USPQ 740, 743 and *In re Davies and Hopkins*, 177 USPQ 381 (CCPA 1973). Moreover, instant claimed time is up to 2 hours which is very different from 20 minutes. The scope of the showing must be commensurate with the scope of the claims. In *re Tiffin*, 448 F.2d 791, 792 (Fed. Cir. 1971), *In re Coleman*, 205 USPQ 1172, *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983), and *In re Greenfield*, 197 USPQ 227.

Graph 4 has shown 24 hours heating has higher protium concentration at about 0.1 PH<sub>2</sub>.

Applicants' argument with respect to JP '859 is noted. But, examples of the cited reference are given by way of illustration and not by way of limitation. In *re Boe*, 148 USPQ 507 (CCPA 1966) and *In re Snow*, 176 USPQ 328.

## Conclusion

This is a RCE application. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1742

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The above rejection relies on the reference(s) for all the teachings expressed in the text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combination of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121.

#### Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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ART UNIT 1742

S. Ip  
March 7, 2004